

**BEST AVAILABLE COPY**  
**EUROPEAN PATENT OFFICE**

Patent Abstracts of Japan

PUBLICATION NUMBER : 63027776  
 PUBLICATION DATE : 05-02-88

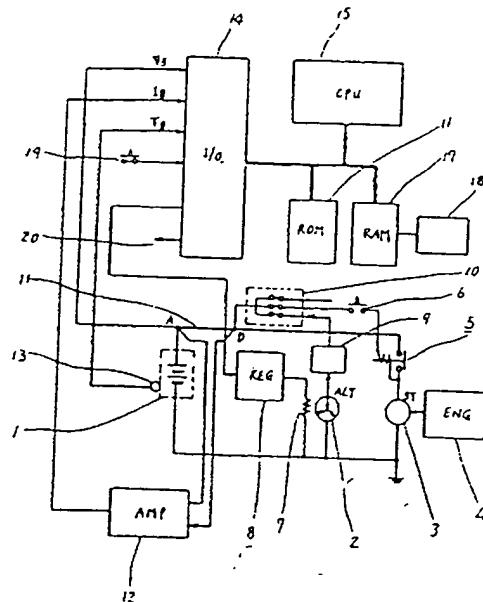
APPLICATION DATE : 21-07-86  
 APPLICATION NUMBER : 61171375

APPLICANT : HITACHI AUTOMOTIVE ENG CO LTD;

INVENTOR : MAKIE YASUO;

INT.CL. : G01R 31/36

TITLE : BATTERY CHARGING CONTROL AND  
 DIAGNOSTIC APPARATUS FOR CAR



ABSTRACT : PURPOSE: To clearly forecast and diagnose life, by mounting a means for detecting the terminal voltage and charge/discharge current of a battery and calculating the change relation between the discharge quantity and terminal voltage of the battery due to the electric load connected to the battery during the start of an engine or immediately before the start thereof.

CONSTITUTION: Means 11, 12 detecting the terminal voltage and charge/discharge current of a battery 1 are provided and, during the start of an engine or immediately before the start thereof, the change relation between the discharge quantity and terminal voltage of the battery 1 due to the electric load connected to the battery 1 is calculated and function for estimating and diagnosing life or correcting function of charging control is performed from said relation. Herein, in a main technique of charging control, relational expression of charge quantity QC and discharge quantity QDC is set to  $QC = aQDC + b$  corresponding to driving history between  $a=0.5\sim 1.5$ ,  $b=10\sim 70\text{mAh}/\text{km}$  and feedback from a controller 8 to an alternator 2 is performed to carry out the stabilizing control of the battery.

COPYRIGHT: (C)1988,JPO&Japio